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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,124	09/15/2003	Keiji Kashima	DAIN:752	9067
6160	7590	02/14/2005	EXAMINER	
PARKHURST & WENDEL, L.L.P.			DUDEK, JAMES A	
1421 PRINCE STREET				
SUITE 210			ART UNIT	
ALEXANDRIA, VA 22314-2805			PAPER NUMBER	
			2871	

DATE MAILED: 02/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/662,124

Applicant(s)

KASHIMA, KEIJI

Examiner

James A. Dudek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-9 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0095532 ("532").

Regarding claim 1, 532 teaches a retardation optical element having a function of reflecting ultraviolet light, comprising a retardation layer that has a cholesteric liquid crystalline molecular structure and acts as a negative C plate, wherein the retardation layer is made so that at least part of its selective reflection wave range is included in an ultraviolet region of 100 to 400 nm. 532 lacks a maximum reflectance for light in the ultraviolet region is 30% or more [see paragraph 74 -C plate reflecting uv light]. Although the reflectance is not explicitly stated the compensator of 532 is a polarizer and as such would reflect as much light as possible. In any case, it would have been obvious to one of ordinary skill at the time of invention to improve the reflectance of the 532 polarizer to as high as physically possible in order reflect more of the polarized light. [see paragraph 55].

Regarding claim 2, 532 teaches the retardation optical element according to claim 1, wherein the structure of the retardation layer is that of a chiral nematic liquid crystal that has been three-dimensionally cross-linked and solidified [see paragraph 74—the GB 2,315,072 is incorporated by reference and paragraph 100 teaches an A-plate compensator made by polymerizing a cholesteric LC material, i.e. a three-dimensionally cross linked chiral nematic material; also note that according to paragraph 74 the -C plate is a highly twisted A plate].

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Regarding claim 3, 532 teaches the retardation optical element according to claim 1, but lacks the structure of the retardation layer is that of a polymeric liquid crystal that has been solidified into a glassy state. However, it would have been obvious to one of ordinary skill to use a liquid crystal polymerized to a glassy state to improve the transmittance of the polarizer.

Regarding claim 4, 532 teaches the retardation optical element according to claim 1, further comprising an additional retardation layer laminated to said retardation layer, the additional retardation layer having a selective reflection wave range different in the ultraviolet region from that of said retardation layer [see paragraph 71—the -C-plate compensator is combined with at least an A-plate compensator].

Regarding claim 10, 532 teaches a liquid crystal display comprising: a liquid crystal cell; and a retardation optical element having a function of reflecting ultraviolet light, as set forth in claim 1, the retardation optical element being placed on at least one side, relative to a direction of thickness, of the liquid crystal cell, wherein the retardation optical element having the function of reflecting ultraviolet light selectively reflects light in a predetermined state of polarization, in an ultraviolet region that constitutes a part of its selective reflection wave range, thereby decreasing an amount of ultraviolet light that enters the liquid crystal cell [this is an intended use claim, and the compensator of 532 is intended to be used in a LC cell and would inherently reflect uv light].

Allowable Subject Matter

Claims 5-9 and 11 are allowed.

Reasons for allowance are because the prior art of record teaches a retardation optical element having a function of reflecting ultraviolet light, comprising: a first retardation layer that has a cholesteric liquid crystalline molecular structure and acts as a negative C plate; and a second retardation layer laminated to the first retardation layer, the second retardation layer having a cholesteric liquid crystalline molecular structure and acts as a negative C plate. However, the prior art of record fails to teach or suggest, in combination with the claims supra, the first and second retardation layers are made so that a direction of twisting of liquid

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crystalline molecules in the first retardation layer is opposite to that of twisting of liquid crystalline molecules in the second retardation layer, that at least part of the selective reflection wave range of the first retardation layer and at least part of the selective reflection wave range of the second retardation layer are both included in an ultraviolet region of 100 to 400 nm, and that a maximum reflectance for light in the ultraviolet region is 60% or more as a whole.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Dudek whose telephone number is 571-272-2290. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Dudek
Primary Examiner
Art Unit 2871

Am 3
Tech Team for J. Dudek
Primary Examiner